



FROM GHG REDUCTION TO QUEBEC ENERGY INDEPENDENCE

Paper

Presented by Will Solutions Inc.

Within the scope of the Commission sur les enjeux énergétiques du Québec

October 2013

INTRODUCTION

QUEBEC CHANGE OF POLICY TOWARDS A GREEN ECONOMY AND A RESILIENT SOCIETY

Climate changes are there for a long time. The same is true for the controversies surrounding their causes and their impacts, despite the fact that the GEIC¹ recent report confirms, with a probability of 95% that the rising of global temperature is due to Greenhouse Gas (GHG) accumulation caused by human activity.

As mentioned by the "*Commission sur les enjeux énergétiques du Québec*", for over a year now, we've seen a substantial increase in fossil energy supply throughout the world², more particularly in North-America, since 2008³ and combined with the decrease in the electricity tariffs and a certain disinterest for renewable energies⁴. At WILL we believe that the green economy is the overall economic activity generated by companies that produce goods and services that contribute to avoid or reduce environmental impacts such as GHG emissions. Energy and natural resources are key figures in the societal carbon foot print, and consequently, constitute a major axis for climate change politics.

The transition towards a green economy will not come without resistance. The time is still to act, despite pitfalls from climate changes skeptics and the recent increase in the global demand for fossil energy resources⁵. Therefore, we applaud the transition to a low-carbon economy, confirmed by the Quebec Government through its Climate Change Action Plan (PACC 2013-2020)⁶; a plan based on scientific reports and credible consultations. The Quebec society must act now in order to face important environmental, social and economic changes as predicted by GEIC experts.

We do recognize that the MDDEFP's official target, established in 2012, to reduce GHG Quebec emissions by 20% by 2020, compared to 1990 is ambitious. The reductions targeted for 2020 are 25% and as stated by the Commission, the challenge is quite important⁷. It will set new constraints for the use of energy and particularly fossil energy. Our company supports the proposed strategy in favor of energy efficiency⁸ in all economic sectors and for all energy sources.

It is in the spirit of contributing to climate change challenges and of optimizing the use of energy that we present this paper, which contains some recommendations and a brief presentation of our contribution to address this challenge and in which we saw an opportunity for technological, economic, energetic and societal development.

¹ GEIC: Global Environment Information Center, September 27, 2013 Report.

² "Key world energy statistics 2013" International Energy Agency.

http://www.iea.org/publications/freepublications/publication/KeyWorld2013_FINAL_WEB.pdf, page 6.

³ "Key world energy statistics 2013" International Energy Agency.

http://www.iea.org/publications/freepublications/publication/KeyWorld2013_FINAL_WEB.pdf, page 6.

⁴ <http://consultationenergie.gouv.qc.ca/documents/document.asp>. Voir résumé: Un secteur en pleine mutation

⁵ The well known author Lester R. Brown indicated in 2007 a fuel peak and a shortage in fossil energy. *Le Plan B pour un pacte écologique mondial*, Édition Calmann-Lévy Souffle Court Éditions, 2007.

⁶ Climate Change Action Plan http://www.mddefp.gouv.qc.ca/changements/plan_action/pacc2020.pdf.

⁷ Commission Report « *De la réduction des Gaz à Effet de serres à l'indépendance énergétique du Québec* », page 55.

⁸ <http://consultationenergie.gouv.qc.ca/documents/document.asp>. See point 1.

1. TO TRANSFORM THE CRISIS INTO A STEPPING STONE TOWARDS SUSTAINABLE DEVELOPMENT

We think that the best way to initiate action is to address, first and foremost, GHG source reduction⁹ while stimulating low energy consumption¹⁰ such as energy efficiency and transport. These actions will counterbalance the increasing demand for fossil energy which constitutes the source of the problem.

By reducing GHG's, we are not only reducing associated problems but we are building collective confidence to address the global issue. One of the effects in reducing GHG emissions is increased productivity, competitiveness as well as energy independence since it requires us to produce goods and services with less energy and resources.

Owners, tenants or operators of the tens of thousands of institutional commercial and industrial (ICI) installations constitute one of the most important levers of the green economy. The vast majority of them are not regulated ($\leq 25,000$ MT of GHG/year) under the Quebec cap and trade system (SPEDE). We expect that their desire to do better and more efficiently will create a future demand for green economy. In 2009, as stated in several studies, 66% of Quebec's GHG emissions will come from transport, waste management and energy efficiency activities¹¹.

WILL estimates that 53% of Quebec's GHG emissions (2008 inventory) will come from these small final emitting business units or installations, which produce less than 25,000 MT of GHG's/year and focused on three different activities: (1) energy consumption (2) production and waste management and (3) transportation of goods as well as people. These 3 activities, directly associated with operating buildings, might also be used as a base in initiating "green" changes to reduce Quebec's ecological foot print. A recent report from McKinsey recognizes the importance of these 3 activities¹².

We agree with the Commission that the overall transport footprint is growing in Quebec. In fact, from 1990 to 2010, GHG emissions relating to transport have increased by 27.9%¹³.

We are convinced that this increase is directly linked to the providing of goods and services in Quebec. We believe that potential solutions to transportation issues include the implementation of measures concerning the way these goods and services are to be completed. In the United States since 2007, we notice a reduction in GHG emissions associated with ground transportation. Overall Americans drive less since they live more and more in urban areas, used public transit more often, work at home, and consequently, reduce the use of their cars or vehicles.¹⁴

⁹ There are 2 main areas involving GHG reduction projects: reduction at source (energy efficiency, landfill diversion and transport optimization) and carbon sequestration project. The process that captures and long-term storage of atmospheric carbon dioxide

¹⁰ Refer to Commission Report "*De la réduction des Gaz à Effet de serres à l'indépendance énergétique du Québec*", pages 50 and 54 referring to the potential of GHG reduction associated to energy efficiency.

¹¹ Excluding emissions associated to industrial process and large emitters that generated $\geq 25,000$ MT of GHG/year.

¹² http://www.mckinsey.com/insights/energy_resources_materials/mobilizing_for_a_resource_revolution.

¹³ Inventaire québécois des émissions de GES en 2010 et leur évolution depuis 1990, page 9.

¹⁴ Earth Policy Institute, Data for Data Highlight 41. U.S. Carbon Dioxide Emissions Down 11% since 2007. October 2 2013 http://www.earth-policy.org/data_highlights/2013/highlights41.

So, if we relieve road congestion, by introducing new provisions of work and service (flexible hours, car pooling, teleworking ...) it will reduce the need of building supplemental infrastructures to meet transportation needs. It is clear that the systematic conversion of the traditional car into an electric one does not constitute a short term solution¹⁵. Finally, there are numerous solutions to lower the carbon footprint, whether it comes from transport or fossil energy. It is also a question of territory such as large urban centers and its suburbs. The solutions to reduce the carbon footprint associated to transport are numerous¹⁶. An analysis of the potential of teleworking as well as the transfer of institutional and public services to local areas in providing services has to be considered. Any of these actions will have an impact on transportation needs.

Generally speaking, we do understand that a provincial strategy to reduce GHG emissions harmonised around a consistent energy policy would require a structure built around the 4 following axes:

1. **An efficient regulation** that is non bureaucratic, economically feasible and affordable for all Quebec economic stakeholders for the medium and long term.
2. **The use of direct or indirect carbon taxes** associated to the financial capability of all stakeholders without affecting the stability of the economy. The use of carbon taxes to support efforts in the reduction of GHG emissions by low emitters is essential.
3. **The use of regulatory mechanism** like cap and trade dedicated to large GHG emitters such as the Quebec SPEDE.
4. **The use of economic incentive mechanisms** that reward conscious and voluntary efforts that go beyond regulation or business as usual. Such a movement already exists¹⁷.

Low emitters constitute the vast majority of the economic stakeholders, in number and in diversity as well as for their impact on the Quebec GDP and GHG emissions. We believe that the Quebec community of low emitters is an important vehicle of social change. Stimulate behavioural change while rewarding economically low emitters for their GHG reduction efforts¹⁸ is complementary to the regulation as well as direct or indirect carbon taxes.

In order to reduce GHG emissions significantly, our society must internalize behavior change. This change must include both low and large emitters. Furthermore, it must also be part of an economical strategy to bring together all layers of society. It is therefore necessary to include all the primary elements that transform these changes into a way of life. Otherwise, the GHG reduction target might become a brake on the economy and even lead to a recession, as mentioned by Pierre-Olivier Pineau at the Commission¹⁹. The sole introduction of carbon taxes or quasi-taxes does not constitute a motivational factor.

¹⁵ L'avenir du Québec passe par indépendance énergétique, Normand Mousseau, Éditions Multimondes, 2009, page 72.

¹⁶ L'avenir du Québec passe par indépendance énergétique, Normand Mousseau, Éditions Multimondes, 2009, page 101-110.

¹⁷ «Who cares wins» David Jones, Founder of One Young World. Financial Times Publishing, 2012, Page 147 (Mark & Spencer; Plan A), pages 167-170.

¹⁸ «Who cares wins» David Jones, Founder, One Young World. Financial Times Publishing, 2012, Pages 1-21.

¹⁹ Le courage des moyens, Consultation publique sur les enjeux énergétiques du Québec, 13 septembre 2013, page 6.

The Australian example is clear, according to the study by Alex Robson of the Griffith University in September 2013 *"Nevertheless, the tax will have significant economic costs. ... Furthermore, government data shows that the tax has not reduced the level of Australia's domestically produced CO₂-e emissions."*²⁰

Even if Quebec's situation is not actually the same, nevertheless, the sole introduction of a tax might have a perverse economic effect and doesn't insure reductions in GHG emission. We would like to bring to the Commission's attention to signs of limits and shortfalls of the carbon tax in Germany and in France, as recently stated by Europeans dailies²¹.

In practical terms, we propose to the Quebec government to give priority to the stimulation and the economic support to GHG emission reduction driving projects addressed to low emitters that are not regulated by the SPEDE (installations that emit less than 25,000 MT of GHG/year). Not only do they constitute the most important part of the Quebec GHG emissions ($\approx 70\%$) but they represent an economical sector that is less prone to focus on this type of action, considering its size and its more modest means. The economic reward is an important signal for change and additional income for the government. We believe that the stimulation will favor the access to the voluntary carbon market without direct disbursements from the government other than support through government financial assistance programs. We would like to mention that there are perverse effects associated with carbon taxes as well as limits to their efficiency that affect stakeholders capacity to absorb change without affecting competitiveness and economic development.

2. WILL'S SUSTAINABLE COMMUNITY SOLUTION

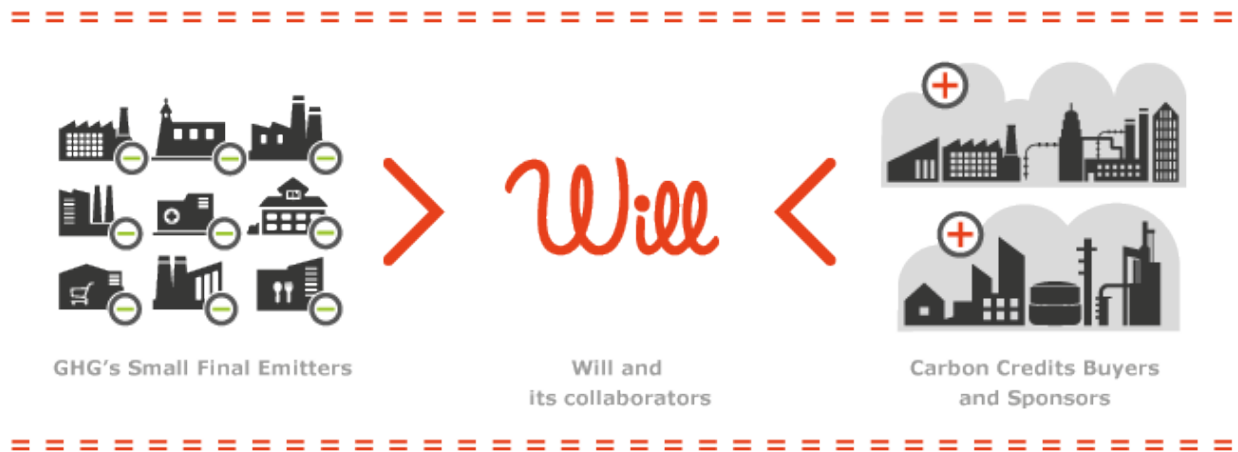
Our Sustainable Community Solution has been specially designed to reduce GHG emissions originating from low emitters, all sectors taken into account (manufacturing, commercial and institutional) (≤ 25 TM/year), that emit close to 70% of Quebec's GHG and for which reductions are unaffordable. WILL offers to low emitters the possibility to trade off their GHG reduction efforts by stimulating and accounting for their common efforts and selling them on the carbon market²².

²⁰ Australia's Carbon Tax, An Economic Evaluation, Dr. Alex Robdon, PhD, Department of Accounting, Finance and Economics, Griffith University, Australia, September 2013, pages 6 et 7.

²¹ Le Figaro, section The New York Time international weekly, 1^{er} Octobre 2013 « *Allemagne; les obstacles à un Plan d'énergie propre.* », pages 1 et 4. Le Monde, vendredi 4 octobre 2013, page 3 « *En Allemagne, les verts modérés sont favorables à une coalition avec Angela Merkel* ». Le Figaro, vendredi 4 octobre 2013, « *En Europe, les verts font mine grise* » et « *La pollution automobile, un nouveau casse-tête allemand pour François Hollande* », page 8.

²² Markets that lean on companies appetite, from all over the world, to include CSR in their corporate politics http://en.wikipedia.org/wiki/Corporate_social_responsibility

Will's Sustainable Community Solution



Sustainable Community Solution is based on a new GHG quantifying methodology designed by WILL²³ and internationally recognised by Verified Carbon Standard²⁴ and more recently with the validation of its first cluster project that estimate to 22,8 MT of eCO₂²⁵ the potential of reduction eligible for exchange on the voluntary market for 2010-2019.

3. WILL'S SUSTAINABLE COMMUNITY SOLUTION

- GOAL:** To encourage low emitters to reduce their GHG emissions by selling them on the carbon market thus rewarding their voluntary, measured and certified efforts. For the 2010-2020 period, we are targeting to generate 32 MT of carbon credit titles, that will be available on the voluntary market and easily fungible with Quebec's "Projet de règlement concernant le système de plafonnement et d'échange de droits d'émission (PEDE)".
- VISION:** To stimulate individual and collective GHG reduction efforts and their aggregation and validation originating from the thousands of low emitters grouped in the Community. These efforts, that must be voluntary, are measured and sold on the carbon market permitting the integration of carbon costs in the economy.
- INVESTMENT SOURCES:** Will Solutions, our technological, methodological and financial partners as well as support from the Quebec government (since 2010) via the Ministère des Ressources naturelles et de la Faune (MRNF), the MDDEP and Emploi Québec and finally regional carbon markets at international levels.
- PATENTS:** Will Solutions holds a positive patentable analysis for its Sustainable Community Solution. A demand for a first patent has been submitted in January 2012 for the American market at the United States Patent and Trademark Office²⁶ (USPTO). Second patent has been submitted in January 2013 for the Canadian Market. Other requests for patents are under preparation.

²³ <http://www.v-c-s.org/methodologies/VM0018>.

²⁴ <http://www.v-c-s.org/>.

²⁵ <https://vcsprojectdatabase2.apx.com/myModule/Interactive.asp?Tab=Projects&a=2&i=929&lat=52%2E939915&lon=-73%2E549133&bp=1>.

²⁶ <http://www.uspto.gov/>

- **INNOVATION:** Conception and approval of a new world-class methodology by the VCS international standard. The VM0018 methodology will be the cornerstone of all Sustainable Community Projects in the world and will favour, through its fungible aspect, the availability of certified GHG reduction titles. In this sense, Will Solutions responds to the requirements of several emerging carbon markets.
- **TRACKING PLATFORM:** Our tracking platform, linking Sustainable Community members, is already operational. It has been recently recognized by an important international tracking project in United States and also by the Quebec cluster project's validator. Its replacement value has been estimated at nearly \$ 11millions CDN.
- **ATTRACTIVE FORCE:** Several partners stimulate registration to our Sustainable Community Solution (industrial parks, associations and municipalities). We already have thousands of members and have concluded several 10 year contracts. This is only the beginning. Our Quebec project is the first regional cluster.
- **BUSINESS MODEL:** Setting up of a low emitter Community in Quebec; no fee for the members of the Community for all the duration of the project (2010-2020); full service and technical support for the members (registration, referencing audit; customized electronic account; training; identification of reduction opportunities between members; stimulation of measurement efforts); aggregation and third part validation; selling of the carbon titles at the best price possible; recurrent sharing of 50/50% of the net sale of the carbon credits associated to reductions registered in the member accounts. Finally, Will Solutions will return 10% of its net profit after taxes into sustainable projets carried out by the community²⁷.

WILL'S SUSTAINABLE COMMUNITY SOLUTION



In short, climate change issues are a springboard toward sustainable development based on a less fossil-fuel dependent economy, a behavioral adaptiveness of our society, the introduction and the development of green technologies as well as the cooperation with other low emitters that are also confronted with the same challenges and without many resources available. This is the age of sluggishness and cynicism. So, it is important to give a positive signal to society: The challenge is huge, but we do have the possibility to take it up, so we can develop accordingly, if we tackle it now systematically and with creativity.

²⁷ Corporate Social Responsibility (CSR).

That signal is present in the documents that have been produced. However, it should be examined more thoroughly starting by informing the population of exactly what is going on concerning the scientific forecasts and the economical impacts, associated with the measures to be implemented, on our lifestyle and quality of life. Society needs a wakeup call to stimulate involvement through action. A climate-state of shock. Especially when, at the same time, we propose measures to meet this challenge. Thus, we hope to stimulate this "social resilience" often alluded to by the Commission's works and leave a generational legacy that takes sustainable development into account.

4. RECOMMANDATIONS

1. To stimulate, support and encourage GHG emission reduction efforts from thousands to hundreds of thousands of low emitters, including citizens, while democratizing access to carbon markets thus integrating carbon costs into our economy.
2. To implement structuring projects allowing the active involvement and participation, through a domino effect, of tens of thousands of low emitters in GHG emission reductions. These measured reduction efforts shall be rewarded economically, according to the nature of the efforts. There is, therefore, a need for a carbon signal. The implementation of the proper technical training programs, customized to fit low emitters in their day to day activities, will enhance their engagement in their GHG emission reduction projects.
3. To implement a program, through SPEDE's revenues to economically stimulate projects for GHG reduction introduced and realized in Quebec which will give Quebec the opportunity to reward voluntary actions, beyond regulation and taxes.
4. To offer to the Quebec economy a group of complementary measures, extremely articulated and adapted to the Quebec reality, including: regulation, taxation, fiscal incentives and financial compensations and rewards.
5. To anticipate a fair linkage between the emission titles granted to large emitters (through the new PEDES regulation) and the use of carbon credits on the voluntary market from efforts carried out by Quebec's low emitters. The intent here is to target a common and complementary operation of these two systems in order to achieve the target of reducing by 20% GHG emissions anticipated by Quebec in 2020.
6. To foresee a policy forcing Quebec to compensate, to a minimum of 50%, or even 75%, its GHG reduction targets where small projects or efforts are made in the Quebec jurisdiction, before going into worldwide offset markets (or any other reduction titles).
7. To foresee, every 5 years, the revision of the Quebec energy policy associated to GHG emission reduction targets.
8. Not to limit GHG reduction efforts on transport, solely by its electrification, whether it is individual or public. We must look to combine behavioral changes from low emitters (employees, clients, suppliers...) in the realization of their economic mission in the pertinence and the mobility of their travel. The solution is not only in the construction of transport infrastructures but also in reducing demand on transportation.

CONCLUSION

By reducing GHG emissions, Quebec will be able to stimulate its social and environmental resilience. **Climate change challenges both personal and societal behaviour** in choosing the technological and economic model in order to overcome our dependency on fossil energy. Basically, it is a question of consciousness and attitude. See the opportunity through a potential crisis.

It's a question of choice and attitude. We must see the opportunity in the potential crisis. WILL also works in this sense by offering to low GHG emitters practical solutions, in several areas, that can be profitable in reducing GHG emissions.

In this manner, little by little, we will create a new economy and a collective green wealth, capable of insuring prosperity by confronting and dealing with climate changes. Still today, Darwin knows best, the law of adaptation applies to all species.

About Will Solutions Inc.

Will Solutions is recognized worldwide for its innovative and efficient greenhouse gas reduction solutions. By working with regional Carbon Groups, Will offers sustainable development solutions to stimulate quantify and convert into carbon credits efforts made in energy efficiency, transport optimization and redirection of waste. These carbon credits are then exchanged on the global voluntary carbon market. WILL's team is proud to provide win-win solutions to businesses, governments as well as involved communities

WILL has been carbon neutral since 2010 and his socially committed to return 10% of its net benefits in projects supporting sustainable development.

REFERENCES

1. Corporate portfolio http://www.gedden.com/uploadedfiles/Portfolio_EN.pdf
2. Manifesto http://www.gedden.com/uploadedfiles/Manifesto%20-%20final%20-%20EN_May2012.pdf
3. The basis of our Sustainable Community Solution
http://www.gedden.com/uploadedfiles/Fondement%20CD_EN.pdf
4. Press release http://www.gedden.com/uploadedfiles/CP_PD_EN.pdf